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L2: Entry 5 of 5 File: USPT Jan 19, 1999

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TITLE: Controlled release of pharmaceutically active substances for immunotherapy

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CLAIMS:

We claim:

1. A method of stimulating a systemic immune response to a tumor antigen in a subject which comprises:

a) providing a composition which comprises:

i) a controlled release vehicle containing an immunopotentiating agent selected from granulocyte-macrophage colony stimulating factor and interferon and

ii) an antigen selected from the group consisting of a melanoma tumor antigen and a melanoma tumor cell; and

b) administering the composition from step a) to the subject, wherein administration of the composition induces the systemic immune response.

2. The method of claim 1, wherein the tumor antigen or tumor cell is derived from the subject.

3. The method of claim 1, wherein the controlled release vehicle is biodegradable.

4. The method of claim 1, wherein the subject is a mammal.

5. The method of claim 4, wherein the mammal is a human.

6. The method of claim 1, wherein the interferon is gamma interferon.

7. The method of claim 2, wherein the number of tumor cells in the subject is reduced prior to administering the composition to the subject.

8. The method of claim 7, wherein the reduction of tumor cells is selected from the group consisting of chemotherapy, irradiation and surgical resection.

9. The method of claim 3, wherein the vehicle comprises a biodegradable substance selected from the group consisting of albumin, ethylcellulose, casein, gelatin, lecithin, phospholipid and soybean oil and mixtures thereof.

10. A pharmaceutical composition for inducing a systemic immune response comprising:

a) a controlled release vehicle containing an immunopotentiating agent selected from the granulocyte-macrophage colony stimulating factor and interferon and

b) an antigen selected from the group consisting of a melanoma tumor antigen and a melanoma tumor cell, in a pharmaceutically acceptable carrier.

11. The pharmaceutical composition of claim 10, wherein the tumor antigen or tumor cell is derived from the subject to be treated with the composition.

12. The pharmaceutical composition of claim 10, wherein the vehicle is biodegradable.

13. The pharmaceutical composition of claim 12, wherein the vehicle comprises a biodegradable substance selected from the group consisting of albumin, ethylcellulose, casein, gelatin, lecithin, phospholipid and soybean oil and mixtures thereof.